

# INFORMATION UPDATE

## **Notes, Notices, Cautions, and Warnings**

Throughout this guide, blocks of text may be accompanied by an icon and printed in bold type or in italic type. These blocks are notes, notices, cautions, and warnings, and they are used as follows:



*NOTE: A NOTE indicates important information that helps you make better use of your computer system.*

**NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.**



**CAUTION: A CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.**



**WARNING: A WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious bodily injury.**

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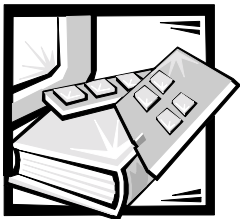
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# **Dell™ PowerEdge™ 2450 Systems Information Update**

This document updates information on the following topics for your Dell PowerEdge 2450 system:

- Installing and removing expansion cards
- Small computer system interface (SCSI) hard-disk drive support
- Installing an upgrade microprocessor in PowerEdge 2450 systems

## ***Installing and Removing an Expansion Card***

To install an expansion card, perform the following steps.



**WARNING:** Before you perform this procedure, you must turn off the system and disconnect it from its AC power source. For more information, see the safety information in your system documentation

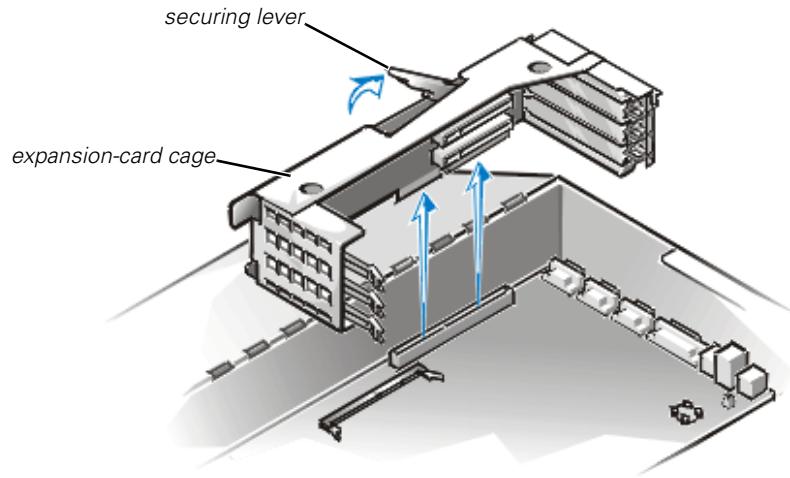
1. Turn off the system, including any attached peripherals, and disconnect the system from the electrical outlet.
2. Prepare the expansion card for installation, and open the system doors.

**NOTICE:** See “Protecting Against Electrostatic Discharge” in the safety instructions in your system documentation.

See the documentation that came with the expansion card for information on configuring the card, making internal connections, or otherwise customizing the card for your system.

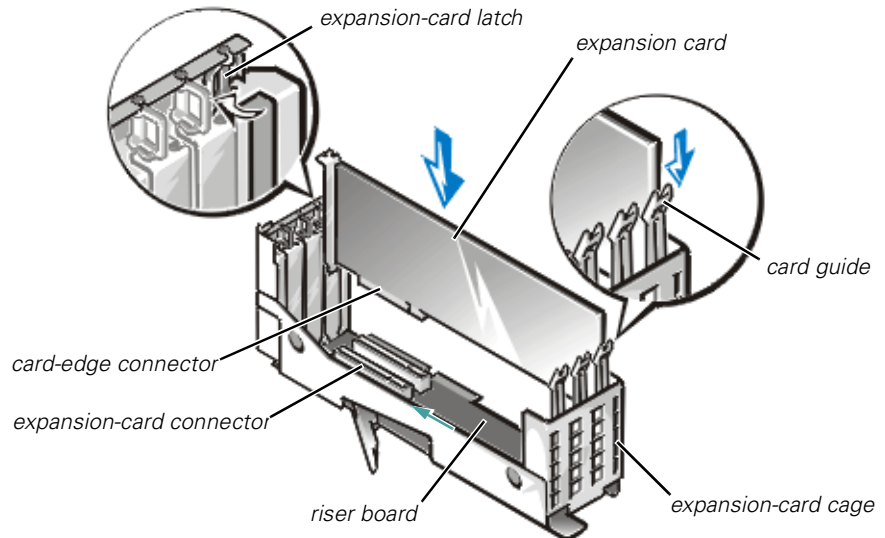
3. Check any cables connected to expansion cards through the back-panel openings. Disconnect any cables that will not reach to where the cage must be placed upon removal from the chassis.

**NOTICE:** Verify that the power LED on the riser board is off before removing the card cage.



**Figure 1-1. Removing the Expansion-Card Cage**

4. Locate the expansion-card cage securing lever (see Figure 1-1). Rotate the lever upward until it stops in an upright position.
5. Lift the expansion-card cage up and away from the chassis.
6. Open the expansion-card latch (see Figure 1-2) and remove the filler bracket from the expansion slot.



**Figure 1-2. Installing an Expansion Card**

7. Install the new expansion card.

Position the expansion-card cage so that the riser board lies horizontally on your work surface.

Insert the card-edge connector firmly into the expansion-card connector on the riser board, until the card is fully seated.

8. When the card is seated in the connector and the card-mounting bracket is aligned with the brackets on either side of it, close the expansion-card latch.
9. If the expansion card is a full-length card, secure the inner end of the card by closing the latch on the card guide over the top edge of the card.
10. With the securing lever in the upright position, lower the expansion-card cage into place until it is aligned.
11. Rotate the securing lever downward until it is flush with the top of the chassis. Make sure the riser board is fully seated in the RISER connector on the system board.
12. Reconnect any cables you removed in step 3.  
  
See the documentation that came with the card for information about its cable connections.
13. Close the system doors, and then reconnect the system and peripherals to their AC power sources and turn them on.

To remove an expansion card, perform the following steps:

1. To release the expansion card from the card cage, rotate the expansion-card latch away from the expansion-card bracket.
2. If the expansion card is a full-length card, release the card's inner end by opening the tab on the card guide (see Figure 1-2).
3. Grasp the expansion card by its top corners, and carefully remove it from the expansion-card connector.
4. If you are removing the card permanently, install a metal filler bracket over the empty card-slot opening.



*NOTE: Installing a filler bracket over an empty expansion slot is necessary to maintain Federal Communications Commission (FCC) certification of the system. The brackets also keep dust and dirt out of the system and aid in proper cooling and airflow inside the system.*

5. Replace the expansion-card cage in the chassis as instructed in steps 10 through 12 of the previous procedure.
6. Close the system doors, and then reconnect the system and peripherals to their AC power sources and turn them on.

## SCSI Hard-Disk Drive Support

Your system's integrated SCSI host adapter supports the Ultra3 (also known as Ultra160) SCSI standard as defined by the SCSI Trade Association. The Ultra3 SCSI standard supports a combination of new SCSI performance and manageability enhancements to increase data throughput up to 160 megabytes per second (MB/sec). For specific information about the Ultra3 SCSI standard, see the SCSI Trade Association Web site at <http://www.scsita.org>.

Your system employs an implementation of Ultra3 (Ultra160) known as Ultra160/m. The Ultra160/m and Ultra3 (Ultra160) drives supplied by Dell are identical and are interchangeable.

The subsections describing SCSI and redundant array of independent disks (RAID) settings in "Using the System Setup Program," of your *Dell PowerEdge 2450 Systems User's Guide* have been combined to read as follows:

### SCSI/RAID Controller

Selections are **RAID Enabled**, **SCSI Enabled**, and **Off**. When you set the **SCSI/RAID Controller** to **RAID Enabled**, **Channel A** displays **RAID** and **Channel B** displays **SCSI**. When you set it to **SCSI Enabled**, **Channel A** and **Channel B** display **SCSI**. When you set it to **Off**, **Channel A** and **Channel B** display **Off**.

When installing the SCSI backplane daughter card as addressed in "Installing Hard-Disk Drives," of the *Dell PowerEdge 2450 Systems Installation and Troubleshooting Guide*, make sure to slide in the daughter card until it clicks and then lock the card into place by closing the retention lever on the card's front edge.

## Installing an Upgrade Microprocessor in PowerEdge 2450 Systems

This section provides instructions for:

- Removing the single edge contact (SEC) cartridge and heat sink
- Installing the new SEC cartridge and heat sink

### Precautionary Measures

Before you perform any of the procedures in this section, take a few moments to read the following warning for your personal safety and to prevent damage to the system from electrostatic discharge (ESD).



**WARNING: Follow these steps carefully to ensure your personal safety and to protect the equipment.**

**Before you start to work on the system, perform the following steps in the sequence listed:**

1. Turn off your system and any devices.

2. Ground yourself by touching an unpainted metal surface on the chassis, such as the metal around the card-slot openings at the back of the system, before touching anything inside your system.

While you work, periodically touch an unpainted metal surface on the system chassis to dissipate any static electricity that might harm internal components.

3. Disconnect your system and devices from their power sources. Also, disconnect any telephone or telecommunication lines from the system.

Doing so reduces the potential for personal injury or shock.

In addition, take note of these safety guidelines when appropriate:

- When you disconnect a cable, pull on its connector or on its strain-relief loop, not on the cable itself. Some cables have a connector with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before disconnecting the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, make sure both connectors are correctly oriented and aligned.
- Handle components and cards with care. Don't touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a microprocessor chip by its edges, not by its pins.

**NOTICE: If your system has two microprocessors installed, the secondary microprocessor must be the same type and have the same operating frequency and cache size as the primary microprocessor. For example, if the system you are installing has a 500-megahertz (MHz) Intel® Pentium® III primary microprocessor, the secondary microprocessor must also be a 500-MHz Pentium III microprocessor.**

**NOTICE: All empty microprocessor connectors must be populated with a terminator card. If your system supports more than one microprocessor and you are not installing the maximum number of microprocessors, the remaining microprocessor connectors must have a terminator card.**

**NOTICE: The terminator card must be rated to run at 133 MHz.**

## ***Before You Begin***

Before shutting down your system, perform these preliminary steps:

- Record the system configuration settings.
- Update the embedded server management (ESM) firmware.
- Update the basic input/output system (BIOS), if necessary.
- Use the resource configuration utility (RCU) diskette to save the RCU configuration settings (see your *User's Guide* for complete information).

During the upgrade procedure, you must use a wrist-grounding strap for ESD protection.

## *Recording the System Configuration*

View the system configuration screens in the System Setup program and make a record of the settings.

## *Updating the ESM Firmware*

If an ESM firmware diskette is included with the upgrade kit, update your ESM firmware with the version contained on that diskette by performing the following steps. The latest version of the ESM firmware is available at <http://support.dell.com>.

1. Insert the ESM firmware diskette into the diskette drive.
2. Reboot the system.
3. Follow the instructions on the screen after the system completes the boot routine.

The message `Successfully Completed Done` appears on the screen.

4. Remove the ESM firmware diskette from the diskette drive and follow the instructions on the screen to reboot the system.

## *Updating the BIOS*

If a BIOS diskette is included with the kit, update your BIOS with the version contained on that diskette by performing the following steps. The latest version of the BIOS is available at <http://support.dell.com>.

1. Insert the BIOS diskette into the diskette drive.
2. Reboot the system.
3. Follow the instructions on the screen after the system completes the boot routine.
4. After the message `BIOS has been successfully installed` appears on the screen, remove the BIOS diskette from the diskette drive and follow the instructions on the screen to reboot the system.

## *Saving RCU Configuration Settings*

Use the RCU diskette provided with the kit to save the current system configuration settings by performing the following steps:

1. Insert the RCU diskette into the diskette drive and reboot the system.
2. Press <Enter> when the **Welcome** screen appears.

The **Main** menu is displayed.

3. Select **Step 5: Save and Exit**, and then follow the online instructions to save the current system configuration information.





*NOTE: The RCU recognizes microprocessors operating at 450 MHz and faster. The latest version of the RCU is available at <http://support.dell.com>.*

## **Removing the SEC Cartridge and Heat Sink**

**NOTICE: Follow the instructions in “Precautionary Measures” to ensure that the system is properly shut down and disconnected from all power sources. Ensure that the system configuration screens are recorded as described in “Before You Begin.”**

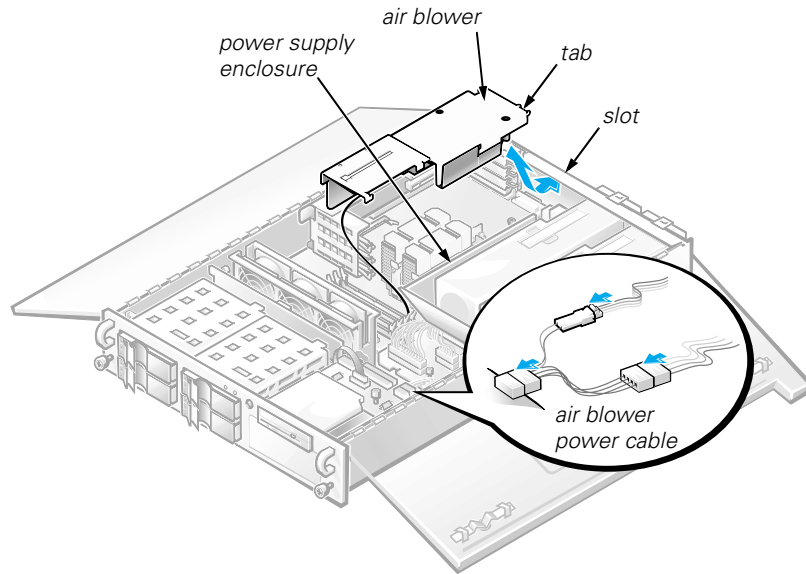
1. Turn off the system, including any attached peripherals, and disconnect the power cable from the electrical outlet.
2. Open the system cover.

See your system's *Installation and Troubleshooting Guide* for specific instructions, if needed.

3. Remove the air blower, if present (see Figure 1-3).
  - a. Unplug the Y-shaped air blower power cable from the interposer board.
  - b. Position your right thumb on the outside of the power supply enclosure beside the narrower front part of the air blower.
  - c. Push firmly on the power supply enclosure to move it slightly away from the air blower and allow extra clearance to remove the air blower.
  - d. With your left hand, pull the front of the air blower upward and away from the power supplies to unseat it. You should hear it unsnap.

By pulling the air blower slightly away from the power supplies, you avoid the need to use excessive force to clear the power supply enclosure.

- e. Slide the air blower slightly up and toward the front of the chassis until the metal tab at the back right of the air blower slides out of the small slot at the top back of the chassis.



**Figure 1-3. Removing the Air Blower**

4. Remove the SEC cartridge and heat sink as follows.

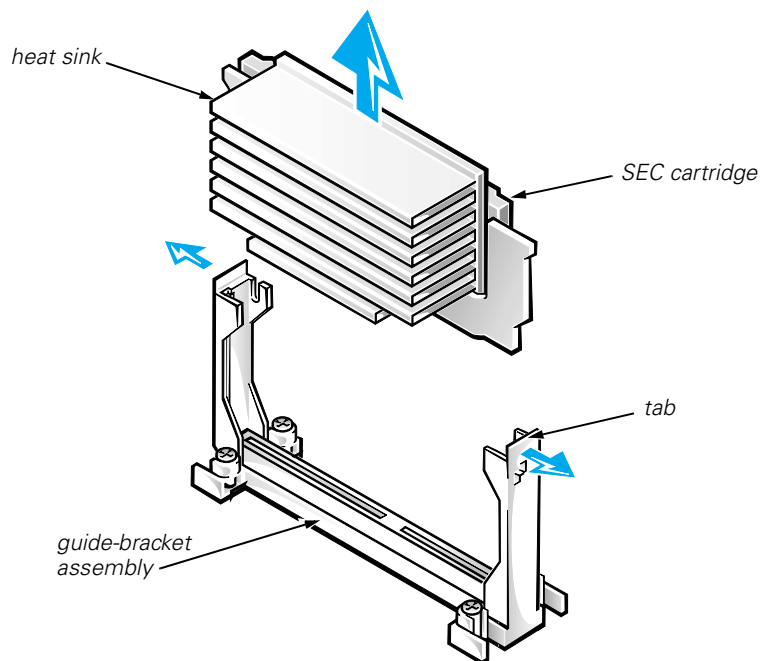


**CAUTION: The SEC cartridge and heat sink can become extremely hot during system operation. Be sure that they have had sufficient time to cool before you touch them.**



**CAUTION: When handling the SEC cartridge and heat sink, take care to avoid sharp edges on the heat sink.**

- a. Pull the tab on one side of the guide-bracket assembly away from the end of the heat sink and pull up slightly on the SEC cartridge and heat sink (see Figure 1-4).
- b. Pull the tab on the other end of the guide-bracket assembly to disengage the tab on the heat sink. Then lift the SEC cartridge and heat sink away from the guide-bracket assembly (see Figure 1-4).



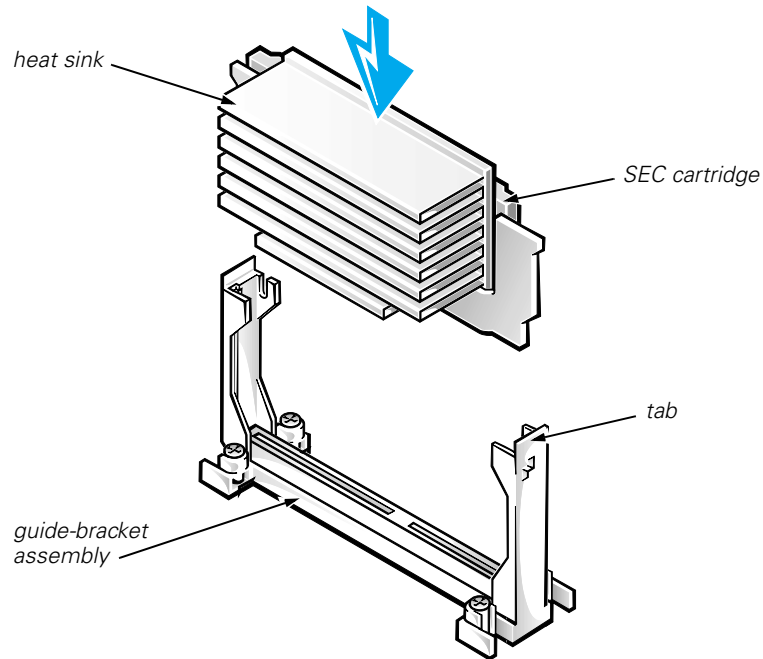
**Figure 1-4. Removing the SEC Cartridge and Heat Sink From the PowerEdge 2450**

### ***Installing the New SEC Cartridge and Heat Sink***

**NOTICE:** All empty microprocessor connectors must be populated with a terminator card. If your system supports more than one microprocessor and you are not installing the maximum number of microprocessors, the remaining microprocessor connectors must have a terminator card.

**NOTICE:** The terminator card must be rated to run at 133 MHz.

1. Slide the SEC cartridge and heat sink into the guide-bracket assembly and firmly seat them in the assembly until the tabs snap into place over the ends of the heat sink (see Figure 1-5).



**Figure 1-5. Installing the New SEC Cartridge and Heat Sink Into the PowerEdge 2450**

2. Replace the air blower, if it was removed in step 3 of the previous procedure (see Figure 1-3).
  - a. Position your right thumb on the outside of the power supply enclosure beside the narrower front part of the air blower.
  - b. Push firmly on the power supply enclosure to move it slightly toward the power supplies, allowing extra clearance to install the air blower.
  - c. Hold the air blower above the heat sink while tilting the back of the air blower slightly down and toward the back of the chassis.
  - d. Slide the metal tab at the back right of the air blower carefully into the *topmost slot* at the top back of the chassis.
  - e. With your left hand, push down firmly on the front of the air blower until you hear it snap into place.
  - f. Make sure that the top of the air blower is level; if it is not level, lift out the air blower and reinstall it making sure the tab goes into the slot at the very top of the back chassis.
  - g. Plug in the Y-shaped blower power cable to the connector on the interposer board.
3. Replace the system cover.
4. Reconnect your system and peripherals to their power sources.